Power of Observation

Students will sharpen one of the key skills in scientific study, observation, by using a variety of tools, including digital microscopes. They will learn the difference between micro and nano and explore how scientists "see" the invisible world.

Strand I: Scientific Thinking and Practice
Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.
K-4 Benchmark I: Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.
5-8 Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.
K-4 Benchmark II: Use scientific thinking and knowledge and communicate findings.
5-8 Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.
Strand II: Content of Science
Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.
K-4 Benchmark I: Recognize that matter has different forms and properties.
5-8 Benchmark I: Know the forms and properties of matter and how matter interacts.

Invisible Forces

Students will explore the atomic forces around us using a chaotic pendulum, Newton's Flying Magnets, and Homopolar motors. Older students will study a particle accelerator, the magnetosphere, and atomic force microscopes.

Strand II: Content of Science
Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions
between matter and energy.
K-4 Benchmark II: Know that energy is needed to get things done and that energy has different forms.
5-8 Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy.
K-4 Benchmark III: Identify forces and describe the motion of objects.
5-8 Benchmark III: Describe and explain forces that produce motion in objects.

Elemental Earth

Students will use geology to explore some of the elements in the periodic table. This will include our traveling "rock museum."

Strand II: Content of Science
Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among

them, and the processes and interactions of Earth's systems.
K-4 Benchmark II: Know the structure and formation of Earth and its atmosphere and the processes that shape them.
5-8 Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.

Our Place in the Universe

We will bring our portable planetarium and take students on a tour of our Solar System and Milky Way Galaxy.

Strand II: Content of Science
Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.
Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.
K-4 Benchmark I: Know the structure of the solar system and the objects in the universe.
5-8 Benchmark I: Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.